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JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **06310699 A**(43) Date of publication of application: **04.11.94**

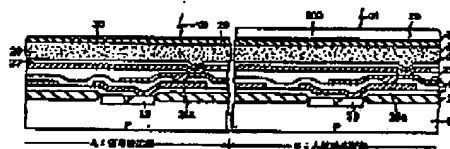
(51) Int. Cl.

**H01L 27/146**(21) Application number: **05117571**(71) Applicant: **OLYMPUS OPTICAL CO LTD**(22) Date of filing: **22.04.93**(72) Inventor: **MATSUMOTO KAZUYA****(54) MULTILAYER SOLID-STATE IMAGE PICKUP DEVICE****(57) Abstract:**

**PURPOSE:** To attain the high S/N ratio of a multilayer solid-state image pickup device by providing a signal detector for causing a detection incident ray to enter and by providing an incident-ray barrier film with specific thickness on a surface electrode.

**CONSTITUTION:** The left side of a picture element part is a signal detector A for causing a detection incident ray to enter and the right side is an incident-ray barrier part B for preventing entering of the incident ray. In the incident-ray barrier part B, a barrier film 200 composed of insulating material is formed on a surface electrode 30 composed of Al. As the material for the barrier film 200, insulating materials such as positive-type or negative-type photoresist film or  $\text{SiO}_2$ ,  $\text{SiN}$ ,  $\text{Ta}_2\text{O}_5$ ,  $\text{Al}_2\text{O}_3$ , are used and the thickness of the material is about  $2\mu\text{m}$ . The thickness is a sufficient barrier thickness for the incident-ray barrier part of soft X-ray or electron beam detecting laminated solid image pickup device. Thus, a satisfactory incident-ray interrupting power can be outputted from the same element.

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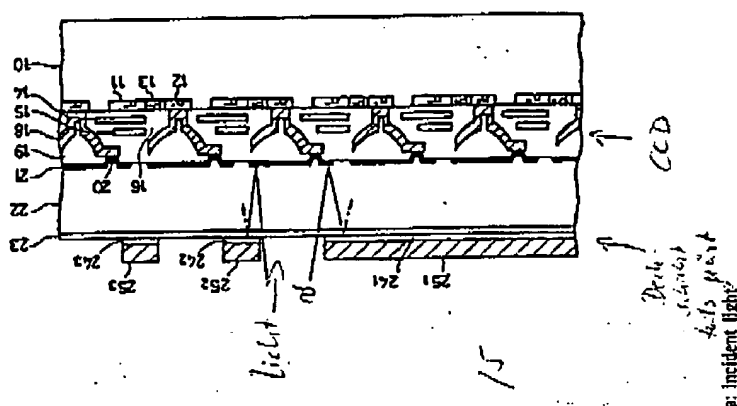
E-944 June 25, 1990 Vol. 14/No. 292

## 54) SOLID-STATE IMAGE SENSING DEVICE

(11) 2-94566 (A) (43) 5.4.1990 (19) JP  
 (21) Appl. No. 63-245990 (22) 30.9.1988  
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 (51) Int. Cl. H01L27/146, H04N5/335

**PURPOSE:** To reduce the leakage amount of a light due to multiple reflection occurring between an optically shielding layer and a pixel electrode and to improve an optically shielding effect by presetting a reflection preventive film having smaller reflectivity than that of the shielding layer between the shielding layer and a transparent electrode.

**CONSTITUTION:** A hydrogenated amorphous silicon photoconductive film 22 and an ITO transparent electrode 23 are deposited on a solid state image sensor chip. Further, a chromium oxide film as a reflection preventive film 24 and a chromium layer as an optically shielding layer 25 are deposited on the electrode 23 by a sputtering method. Then, a resist pattern 26 is formed in a desired pattern on the layer 25. With the pattern 26 as a mask the layer 26 and the film 24 are selectively etched, and the pattern 26 is removed. Even if an incident light is reflected on a pixel electrode 21 and advanced to the layer 25 side, the reflection at the layer 25 side is reduced due to the presence of the film 24. Thus, the leakage of a light due to multiple reflection between the layer 25 and the film 21 can be largely reduced.



## LEGENDE zu den Bibliographiedaten

(54) Titel der Patentanmeldung (22) Anmeldetag in Japan  
 (11) Nummer der JP-A2 Veröffentlichung (71) Anmelder (72) Erfinder  
 (21) Aktenzeichen der JP-Anmeldung (52) Japanische Patentklassifikation  
 (43) Veröffentlichungstag (51) Internationale Patentklassifikation